

*TROITSKIY, YU.V.*  
AUTHOR: Troitskiy, Yu.V.

120-6-32/36

TITLE: An Instrument for Measurement of Electron Beam Profile  
(Pribor dlya izmereniya profilya elektronogo puchka)

PERIODICAL: Pribery i Tekhnika Eksperimenta, 1957, No.6,  
pp. 113 - 114 (USSR).

ABSTRACT: The essential part of the instrument (Fig.1) is a tantalum target, 5, upon which an electron beam, 11, is incident. The target is in the form of a step and can be moved across the beam. Two slits, 6, 7, are cut in the target and are at different distances from the electron gun, in this case 5 and 20 mm. The length of the slits is 10 mm and their width 0.1 mm. Collectors 8 and 9 are placed behind the slits. The target, collectors, second anode, 4, of the gun and the screen, 10, are at the same potential. The entire device is in a continuously evacuated spherical container. The target is moved by means of a silphon bellows. Fig.2 shows typical results obtained with this instrument. The instrument is very simple in construction and does not require centering. There are 2 figures and 5 references, 1 of which is Slavic. G.V. Krivoshchekov collaborated.

ASSOCIATION: Western Siberian Branch of the Ac.Sc. USSR  
~~6-1-2~~ (Zapadno-Sibirskiy filial AN SSSR)

*Incl. Radio-Physics and Electronics*

TROITSKIY, Yu.V.; VAZHENIN, V.I.

Device for studying electron beams with axial symmetry. Izv. Sib.  
otd. AN SSSR no.8:17-20 '59. (MIRA 13:2)

1. Institut radiofiziki i elektroniki Sibirskogo otdeleniya AN SSSR.  
(Electron beams)

TROITSKIY, Yu. V., Cand Tech Sci -- (diss) "Research into the effect of a magnetic field on parameters of electron beams at ultra-high frequencies." Novosibirsk, 1960. 11 pp; (Tomsk Order of Labor Red Banner Polytechnic Inst im S. M. Kirov); 150 copies; price not given; (KL, 26-60, 138)

TROITSKIY, Yu.V.

Experimental testing of the behavior of an electron beam in a  
magnetic field directed along the trajectory of the electrons.  
Izv.Sib.otd.AN SSSR no.1:56-60 '60. (MIRA 13:7)

1. Institut radiofiziki i elektroniki Sibirskogo otdeleniya  
AN SSSR.

(Electron beams)

TROITSKIY, Yu.V.

A method for making an oscillographic record of the frequency of a generator with electronic regulation. Izv.Sib.otd.AN SSSR no.5: 107-108 '60. (MIRA 13:7)

1. Institut radiofiziki i elektroniki Sibirskogo otdeleniya AN SSSR.

(Electric generators)

9.3130

77324

SOV/57-30-1-3/18

AUTHOR: Troitskiy, Yu. V.

TITLE: Influence of a Magnetic Field on Thermal Expansion  
of the Beam in an Electron Gun

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol 30, Nr 1,  
pp 25-30 (USSR)

ABSTRACT: Mendel (see ref) stated an assumption that the  
magnetic field in an electron gun removes the  
scattering of the beam due to thermal velocities  
of electrons on the cathode. A magnetic field  
chosen properly does not affect electrons leaving the  
cathode with zero velocity, while it acts on electrons  
having additional transverse velocities. The author  
calculated this effect, which is of interest in con-  
nection with demands for higher beam densities. He  
assumed: (a) the beam to be axially symmetrical;  
(b) to have paraxial trajectories; (c) to have low

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thermal velocity electrons following an essentially laminar flow, so that their trajectories never intersect; (d) that the longitudinal components of the electric and magnetic fields do not vary over the cross section of the beam; (e) that the lines of magnetic field follow during the whole path the trajectories of electrons having zero velocity on the cathode. He uses the cylindrical  $r, \theta, z$  coordinate system and writes the equation of motion as:

$$F_r = m(\ddot{r} - r\dot{\theta}^2). \quad (1)$$

with force  $F_r$ :

$$F_r = -eE_r - eB_z r \dot{\theta}. \quad (2)$$

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Here,  $m$ ,  $e$ ,  $E_r$ , and  $B_z$  are mass of the electron, its charge, radial electric field, and axial component

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of the magnetic induction, respectively. Utilizing the Bush theorem he obtains:

$$\dot{\mu} = \frac{\eta}{2} \left( B_z - B_{zk} \frac{r_1^2}{r_e^2} \right), \quad (3)$$

where  $\eta = e/m$ ,  $B_{zk}$  is magnetic field on the cathode;  $r_1$  = initial radius of departure of electrons from the cathode. The author limits his investigation to electrons with  $r_1 = 0$ ; introduces  $\mu = r/r_e$ , where  $r_e$  = radius of the beam in the absence of thermal velocities; uses his assumptions (b) and (c), and introducing the initial conditions  $\mu = 0$  and  $\left(\frac{d\mu}{dt}\right) = (\dot{\mu})_k$  at  $t = t_k$ , obtains the solution:

$$\mu = (\dot{\mu})_k \frac{1}{\omega_{Lk}} \sin \left( \omega_{Lk} \int_{t_k}^t \left( \frac{r_k}{r_e} \right)^2 dt \right), \quad (11)$$

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where  $\omega_{Lk} = \eta \frac{B_{zk}}{2}$ , and  $\int_{t_k}^t \left(\frac{r_k}{r_e}\right)^2 dt$  is the

particular solution of (10) for  $B_{zk} = 0$  and  $(\dot{\mu})_k = 1$ .

The author assumes according to (b) and (c) that all electrons leaving an arbitrary point on the cathode with equal transverse velocity will deviate from the corresponding nominal trajectory for the same amount. Assuming in addition that, according to (11), the deviation of an electron from the nominal trajectory is proportional to its initial velocity, the author obtains the equation of Cutler and Hines (see refs):

$$J_r = J_0 e^{-\frac{r^2}{2\sigma^2}} \int_0^{\frac{r}{\sigma}} \left(\frac{R}{\sigma}\right) e^{-\frac{R^2}{2\sigma^2}} I_0\left(\frac{rR}{\sigma^2}\right) d\left(\frac{R}{\sigma}\right), \quad (13)$$

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where  $J_0$  = current density in the given cross section

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of the beam in the absence of thermal velocities;

$I_0\left(\frac{r R}{\sigma^2}\right)$  = modified Bessel function of zero order;

$\sigma$  = quantity equal to the deviation of a thermal electron from the nominal trajectory, in the case when that particular electron left the cathode with an initial velocity  $\left(\frac{dr}{dt}\right)_k = \sqrt{\frac{kT}{m}}$ , i.e.,

$$\sigma = \sqrt{\frac{kT}{m}} \frac{r_k}{r_k} \frac{1}{\omega_{Lk}} \sin\left(\omega_{Lk} \int_{t_k}^t \left(\frac{r_k}{r_k}\right)^2 dt\right). \quad (14)$$

The author calculated the influence of the magnetic field on the electron spread for the following parameters:  $I = 30$  ma,  $U_a = 1,000$  v,  $r_k = 2$  mm, and minimum radius of the beam  $r_{e \text{ min}} = 0.6$  mm. He uses the method of computation developed by Pierce (Theory and Calculations of Electron of Electron

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Beams, Sov. radio, M., 1956). For the magnetic field on the cathode  $B_{zk} = 100$  gauss, there is no thermal spreading of the beam at its minimum cross section where one finds then the image of the cathode. For larger values of magnetic beams in the cathode region, it is difficult to focus the beam at its exit from the gun. According to Mendel, there are no pulsations in the beam if one satisfies:

$$\frac{B_0}{B_k} = \frac{1}{\sqrt{1-\alpha^2}}, \quad (17)$$

where  $B_0$  is focusing magnetic field;  $B_k$ , magnetic field needed for the "flow of Brillouin";  $\alpha$ , degree of the cathode shielding,  $\alpha = r_k^2 \frac{B_{zk}}{r_o^2 B_0}$ , with  $r_o$  = radius of the beam. Putting  $r_o = r_{e \min}$  in the example under study, the author states that for

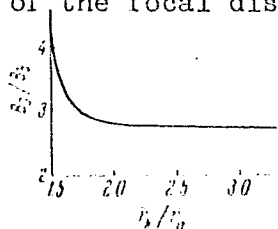
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$B_{zk} = 100$  gauss  $B_0 = 1,200$  gauss, while in the case of a screened cathode, a field  $B_b = 420$  gauss is sufficient. Figure 1 shows the relationship between the increase of the focusing magnetic field and the ratio of the cathode and anode radius for the case when the first image of the cathode lies in the plane of the minimum beam radius. The curve is obtained using Eq. (17) with the assumption that  $r_0$  in the focusing system equals  $r_{e \text{ min}}$  without correction of the focal distance of the anode aperture.



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Fig. 1

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Since the longitudinal magnetic field reduces to a certain degree the thermal spread of the beam and, in particular, can make it zero at certain points inside the gun, a combination of an electron gun with a longitudinal magnetic field may be used alone, or in conjunction with a magnetically focused system. Figure 2 shows another screening system. Magnetic screens are so chosen that magnetic field lines follow the electron trajectories determined in the absence of a magnetic field. The diameter on screen II should be small, to prevent the focusing magnetic field from entering the gun. It is rather difficult to find the directions of the field lines inside the gun. The author recommends a ballistic method consisting of the following: From a nonmagnetic material one makes a model to scale of the beam, and along its contour, at various positions, winds fluxmeter coils of the same number

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of turns. Since the same flux should pass through each of the coils, the magnetic field is adjusted until this is achieved, and the fluximeter coils serve as control devices. There are 2 figures; and 9 references, 1 Soviet, 1 German, 1 French, 6 U.S. The 5 most recent U.S. references are: L. E. S. Mathias, P. G. R. King, Trans. IRE, ED-4, 280, 1957; J. P. Laico, H. L. McDowell, C. R. Moster, BSTJ, 35, 1285, 1956; W. E. Danielson, J. L. Rosenfeld, J. A. Saloom, BSTJ, 35, 375, 1956; J. T. Mendel, Proc. IRE, 43, 327, 1955; C. C. Cutler, M. E. Hines. Proc. IRE, 43, 299, 1955.

SUBMITTED: August 5, 1958

Card 9/10

TROITSKIY, Yu.V.

Possibility of using an inhomogeneous magnetic field for the formation of electron beams with great density. Zhur. tekhn. fiz. 30 no.5:512-521 My '60. (MIRA 13:8)

1. Institut radiofiziki i elektroniki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

(Electric beams)

(Magnetic fields)

24896

S/109/61/006/008/016/018  
D207/D3049,4200AUTHOR: Troitskiy, Yu.V.

TITLE: A two-anode electron gun for SHF electron devices

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 8, 1961,  
1402 - 1404

TEXT: In the present short communication, the author considers a two-anode electron gun which makes it possible to obtain an axially symmetrical beam. The beam leaves the gun parallel to the axis and may have a diameter either smaller or larger than that of the cathode. The geometrical configuration of the gun is shown in Fig. 1. The focusing electrode  $\Phi$ , placed near the cathode K, has a shape and potential such that electrons leaving the cathode move parallel to the axis in a manner similar to that in the Pearce gun with axial beam. The resultant beam goes through the aperture in the 1st and 2nd anodes at potentials  $U_1$  and  $U_2$  respectively. In

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S/109/61/006/008/016/018  
D207/D304

A two-anode electron gun ...

Fig. 1a the aperture of the 1st anode is used as a dispersing lens and that of the 2nd anode as a focussing lens, and in Fig. 1b the actions of the respective anodes are interchanged. The parameters of this gun have been evaluated assuming that collisions of electrons in the region between the anode may be neglected. It was also assumed that between cathode and 1st anode, the potential distribution is that of a plane space-charge limited diode, that between the anodes the potential changes linearly with distance, and that beyond the 2nd anode the potential is that of the latter. A gun of the type described has been used in a 10 cm wavelength low-noise travelling wave tube with magnetic limiting of the beam. The formulae obtained in this article were experimentally tested with a gun having  $z_1 = 2.4$  mm,  $z_2 = 1.75$  mm and  $r_k = 0.65$  mm, using a special apparatus as described in Yu.V. Troitskiy (Ref. 4: Priboiy i tekhnika eksperimenta 1957, 6, 113). Measurements taken at  $U_1 = 200$  V showed that the trajectory slopes after the second anode, with  $U_2 > U_1$ , is zero for  $\alpha = 3.2$  and 5. It is stated in conclusion

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D207/D304

A two-anode electron gun ...

that the type of electron gun described in the article could be successfully used in travelling and backward wave tubes. There are 2 figures and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: K.C. Ho. IRE Trans, 1955, ED-2, 3, 10; F.N.H. Robinson, R. Compfner, Proc. IRE, 1951, 39, 8, 918.

SUBMITTED: September 29, 1960

Card 3/4

KOLOMNIKOV, Yu.D.; KRIVOSHCHIEV, G.V.; TROITSKIY, Yu.V.; CHEBOTAYEV, V.P.

Some characteristics of a gas-discharge optical quantum generator.  
Izv. SO AN SSSR no.2 Ser. tekhn. nauk no.1:117-118 '63.  
(MIRA 16:8)

1. Institut radiofiziki i elektroniki Sibirskogo otdeleniya  
AN SSSR, Novosibirsk.  
(Lasers)

1 11285-53  
ACCESSION NR: AP3000270 S/0288/63/000/002/0117/0112

AUTHOR: Kolomnikov, Yu. D.; Krivoshechekov, G. V.; Troitskiy, Yu. V.;  
Chesotavov, V. P.

TITLE: Some characteristics of a gas-discharge laser<sup>23</sup>

SOURCE: AN SSSR. Sibirsk. otd. Izv., no. 2. Ser. tekhn. nauk, no. 1, 1963, 117-118

TOPIC TAGS: gas-discharge laser, helium-neon laser

**ABSTRACT:** A conventional helium-neon gas-discharge laser has been built and tested. The device uses molybdenum-glass or pyrex tubes 90 cm long and 1.6 to 1.9 cm in inner diameter and mirrors coated with 15 alternating layers of magnesium fluoride and zinc sulfide. One of the mirrors is fixed, while the other can be moved by micrometer screws around two mutually perpendicular axes. A 50-w rf discharge was used to pump the laser. Oscillation was observed at  $1.53 \mu$ ; a weaker oscillation was observed at  $1.62 \mu$ . The laser was tested at various pressures and gas ratios. It was found that addition of a small amount of argon decreased the power output. In addition to an He-Ne mixture,

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ACCESSION NR: AP3000270

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pure neon was lasered at pressures from  $7 \times 10^{-2}$  to  $4 \times 10^{-2}$  mm Hg at the  $1.153\text{-}\mu$  wavelength with a power output 20—30 times less than that produced by the mixture. "The authors express their thanks to colleagues of the laboratory taking part in the work: M. F. Kry'shtal', V. V. Peshetnikov, and I. F. Burmatov. The authors also thank V. K. Solov'yev and V. A. Lazarev, participants in the manufacture of the interference mirrors." Orig. art. has: 2 figures.

ASSOCIATION: Institut radiofiziki i elektroniki Sibirskogo otdeleniya AN SSSR, Novosibirsk (Institute of Radiophysics and Electronics, Siberian Department, AN SSSR)

SUBMITTED: 16Nov62

DATE ACQ: 12Jun63

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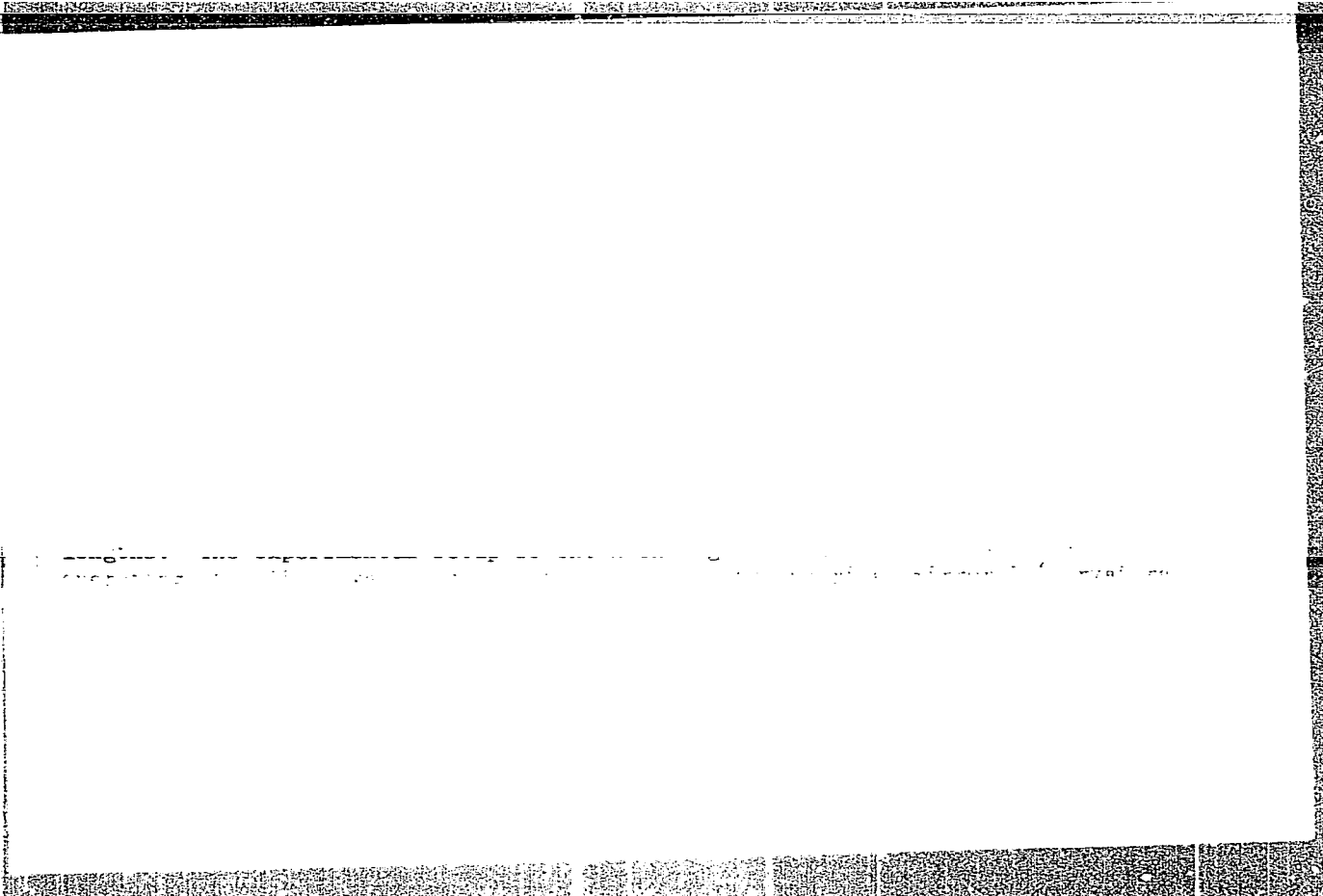
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peared at successively closer spacing and decreased power. For a plate 9 mm thick,

24302-66 FBD/EWT(1)/EWT(m)/EEC(k)-2/T/EWP(t)/EWP(k)/EWA(h) IJP(c) WG/JD

ACC NR: AP6007020

SOURCE CODE: UR/0051/66/020/002/0362/0364

AUTHOR: Troitskiy, Yu. V.; Chebotayev, V. P.

ORG: none

TITLE: Distribution of population inversion across an He-Ne laser discharge

SOURCE: Optika i spektroskopiya, v. 20, no. 2, 1966, 362-364

TOPIC TAGS: gas laser, gas discharge, laser amplification, cascade, pressure effect

ABSTRACT: The authors measured the radial dependence of the coefficient of unsaturated amplification for a helium-neon laser at 11,523 Å in a discharge tube 18.2 mm in diameter and 20 cm in length. The ratio of the neon to helium pressures was 1:10. Different discharge currents and total gas pressures were used. The test procedure and apparatus are briefly described. The results show that the gain falls off sharply away from the axis of the discharge tube towards the sides. This fall-off depends only slightly on the discharge current, but the gain increases monotonically with the current. The radial dependence of the gain is well approximated by a zero-order Bessel function with its zero approximately 1--1.3 mm from the walls of the tube. The optimal pressure was close to 1 mm Hg. When the pressure was increased to 2 mm, the radial distribution was similar, but the gain decreased. An increase of the pressure to 3 mm produced a pronounced change in the shape of the curve. The gain decreased rather than increased, and the curve became flatter. Further increase in the pressure caused the gain to disappear and absorption to set in. This effect

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UDC: 621.375.9: 535



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ACC NR: AF6007020

is due to saturation of the concentration of the metastable helium atoms as the current increases and to an increasing role of cascade processes. The authors thank V. V. Reshetnikov for help with the work. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 14Jun65/ ORIG REF: 001/ OTH REF: 001

Card 2/2 IV

ACC NR: AP7002426

SOURCE CODE: UR/0051/66/021/006/0768/0769

AUTHOR: Bagayev, S. N.; Troitskiy, Yu. V.; Troshin, B. I.

ORG: none

TITLE: Polarization and frequency characteristics of ring lasers with triangular resonators

SOURCE: Optika i spektroskopiya, v. 21, no. 6, 1966, 768-769

TOPIC TAGS: laser, gas laser, ring gas laser, gas laser polarization, gas laser frequency spectrum, ~~laser frequency spectrum~~ *characteristic*

ABSTRACT: The polarization and frequency characteristics of a triangular He-Ne laser arrangement were experimentally investigated along lines described earlier by Doyle and White (Appl. Phys. Letters. 5, 1964, 193). The arrangement had a perimeter of 363 cm which was formed by three multi-layer dielectric mirrors (the first two flat and the other spherical). Two discharge tubes, 4 mm in diameter, were filled with a 1:5 He-Ne mixture at a pressure of 1.8 mm Hg and operated on the 1.153  $\mu$  wavelength. The mode positions were observed by means of an arrangement consisting of a polarization prism, a photomultiplier, and an SCh-9 spectrum analyzer. Beats were observed on the 39-, 43-, and 82-Mc frequencies, the peak intensity of the latter being independent of the

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UDC: 621.375.9:535

ACC NR: AP7002426

turning of the prism around its axis. The peak values of the 39- and 43-Mc beats reached their maxima when the polarization prism was at an angle of  $45^\circ$  to the polarization planes of the system. These peaks disappeared periodically with every  $90^\circ$  turn of the prism. By inserting a birefringent plate (quartz or mica) into the resonator, the difference between the modes could be changed within wide limits. The arrangement is considered convenient for use in studying mode interaction, since Kerr cells, compensators, etc., can be employed to effect a smooth change of the mode difference between zero and its maximum.

Orig. art. has: 3 figures.

SUB CODE: 20/ SUBM DATE: 27Dec65/ OTH REF: 001/ ATD PRESS: 5112

Card 2/2

BAGAYEV, S.N.; KUZNETSOV, V.S.; TROITSKIY, Yu.V.; TROSHIN, B.I.

Spectral characteristics of a gas laser with a traveling  
wave. Pis'. v red. Zhur. eksper. i teoret. fiz. 1 no.4  
21-24. My '65. (MIRA 18:11)

1. Institut fiziki poluprovodnikov Sibirskogo otdeleniya AN  
SSSR. Submitted April 14, 1965.

VASILENKO, L.S.; CHEBOTAREV, V.P.; TROITSKIY, Yu.V.

Visual observation of infrared radiation from a laser.

Zhur. eksp. i teor. fiz. 48 no.3:777-778 Mr '65.

(MIRA 18:6)

1. Institut radiofiziki i elektroniki Sibirskogo otdeleniya  
AN SSSR.

KOLONNIKOV, Yu.D.; TROITSKIY, Yu.V.; CHEBOTAYEV, V.P.

Plane-parallel glass plate in the resonator of a laser. Radiotekh.  
i elektron. 10 no.2:370-371 F '65.

(MIRA 18:3)

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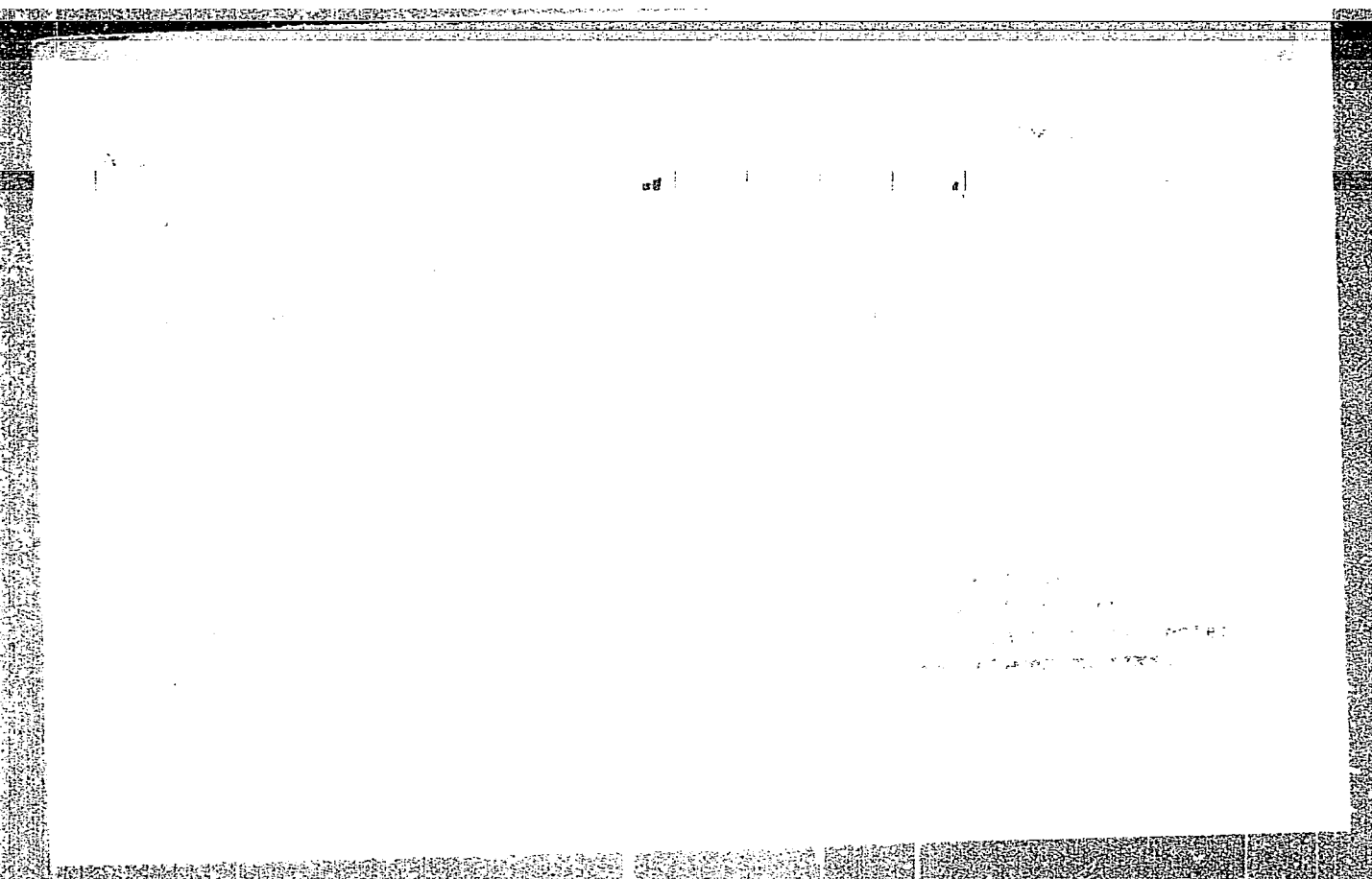
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TROJAK, Jan, prof.

Protection of a connected block unit of capacity exceeding 100  
MW in thermal power stations. Pt.2. Energetyka Pol 19 no.3:  
63-68 Mr '65.

1. Department of Protection Devices and Automatic Control in  
Power Engineering of the Wroclaw Technical University.



TROJAK, Tadeusz, mgr inż.

Economic current densities for the transmission of electric power.

Pt. 1. Energetyka Pol 18 no. 7:214-216 J1 '64.

TROJAK, Tadeusz, mgr inż.

Economic current densities for the transmission of electric power.  
Pt. 2. Energetyka Pol 13 no. 8:246-249 Ag '64.

MOLNAR, Sandor, dr.; SOMOGYI, Zsigmond, dr.; TROJAN, Emil, dr.

Mesenteric cysts in newborn infants. Gyermekgyógyászat 13 no.8:252-255 Ag '62.'

1. A mezoturi Varosi Tanacs Korhaza es a szegedi Orvostudományi Egyetem Gyermekklinika-jának közleménye.  
(INFANT NEWBORN dis) (MESENTERY neopl)  
(CYSTS in inf & child)

TROJAN, Emil, Md.

MOLNAR, Sandor

HUNGARY

MD

Joint report by the Mezotur Town Council Hospital  
(Mezoturi Varosi Tanacs Korhaza) and the Children's  
Clinic, Medical School, University of Szeged (Szegedi  
Orvostudományi Egyetem Gyermekklinika)

Budapest, Gyermekgyógyászat, No 8, Aug 62, pp 252-255.

"Mesenteric Cyst in Infancy."

Co-authors:

SOMOGYI, Zsigmond, MD.

TROJAN, Emil, MD.

BAKACSI, Gyula, dr.; SZABO, Lajos, dr.; TROJAN, Emil, dr.; VIRAG, Istvan, dr.

On the problem of acute osteomyelitis in infants and children. Orv.  
hetil. 103 no.5:205-207 F '62.

1. Szegedi Orvostudományi Egyetem, Gyermekklinika.

(OSTEOMYELITIS in inf. & child.)  
(ANTIBIOTICS therapy) (CORTISONE therapy)

TROJAN, Felix

On functional classification of the vocal and speech organs. Cesk.  
otolaryng. 11 no.1:49-51 F '62.

1. Ambulatorium pro poruchy reci a hlasu na II ORL klinice prof. dr.
2. Novotnyho ve vidni, vedouci prof. dr. Felix Trojan.

(LARYNX) (SPEECH)

TROJAN, Jaromir, inz.

Improving the quality of superphosphates by ammoniation with gaseous ammonia. Agrochem 2 no.3:53-56 '62.

1. Vzykumny ustav anorganicke chemie, Usti nad Labem.

TROJAN, Jaromir

Advantageous method for regenerating spinning baths in viscose  
fiber production. Chem prum 14 no.9:462-464 S '64.

1. Research Institute of Inorganic Chemistry, Usti nad Labem.



TROJAN, Jaromir; VANECEK, Vojtech

Fluidized bed roasting of zinc blends. Chem prum 13 no.4:193-195  
Ap '63.

1. Vyzkumny ustav anorganicke chemie, Usti nad Labem.

TRONAH, K.

Effect of nutrition on the inhibition and growth of certain  
transplanted tumors. Neoplasma, Bratisl. 7 no.1 suppl:78-81 '60.

(NEOPLASMS exper)

(DIET exper)

CZECHOSLOVAKIA UDC 615.761:615.452 Lasix-092.22:616.632-074

NADVORNIKOVA, H.; 1st Internal Department Thomayer's Hospital  
(I. Interni Odd. Thomayerovy Nemocnice), Prague - Krc, Head (Pri-  
mar) Dr. J. TROJAN.

"The Influence of Lasix on the Renal Secretion of Water and Elec-  
trolytes."

Prague, Casopis Lekaru Ceskych, Vol 105, No 44, 4 Nov 66, pp  
1196 - 1200

Abstract [Author's English summary modified]: Various means of  
Lasix application and their influence on secretion of water, Na,  
K, and Cl were investigated. A peroral dose of 20 mg given on  
alternate days has a decreasing influence on the elimination of  
Na and Cl, but the influence on K does not change. When an equal  
dose is administered daily for 5 days reduction of its effect is  
not observed. 11 Figures, 2 Tables, 2 Western, 2 Czech referen-  
ces. (Manuscript received Oct 65).

1/1

JILEK, L.; TROJAN, S.

Influences on resistance of the body against oligemia and ischemia of the CNS during the course of ontogenesis. Cesk. pediat. 18 no.1: 26-32 Ja '63.

1. Fyziologicky ustav fakulty vseobecneho lekarstvi KU v Praze, prednosta prof. dr. Fr. Karasek, DrSc.

|                 |                  |                          |
|-----------------|------------------|--------------------------|
| (HYPERGLYCEMIA) | (CHLORPROMAZINE) | (PENTOBARBITAL)          |
| (ANOXIA)        | (AGING)          | (CENTRAL NERVOUS SYSTEM) |

CZECHOSLOVAKIA

JILEK, J., TRAVNICKOVA, E., TROJAN, S. Physiological Institute,  
Faculty of General Medicine, Charles University (Fysiologicky  
Ustav Fak. Vseob. Lek KU), Prague.

"Influence of Hypoxia on Glycogen Metabolism in the CNS in  
Ontogenesis."

Prague, Ceskoslovenska Fysiologie, Vol 15, No 2, Feb 66, pp 112-113

Abstract: Changes in the amount of glycogen and lactic acid in  
rat prosencephalon (P) and rhombencephalon (R) caused by 6  
minutes of hypoxia at a simulated elevation of 12,000 meters was  
investigated. Rats were either adult or 5, 12 or 25 days old.  
Between the ages of 12 and 25 days hypoxia causes a decrease of  
glycogen in the brain and an increase in P and R. At other ages  
no changes were observed. In 12 day old rats lactic acid content  
increased by 300%. 1 Czech reference. Submitted at "16 Days of  
Physiology" at Kosice, 28 Sep 65.

1/1

- 161 -

JILEK, L.; FISCHER, J.; TROJAN, S.

Higher nervous activity changes under the influence of positive acceleration in rats of various ages. *Activ. nerv. sup.* 4 no.2:128-219 '62.

1. Fyziologicky ustav fakulty vseobecneho lekarstvi Karlovy university v Praze.

(CENTRAL NERVOUS SYSTEM physiol) (ACCELERATION)  
(AGING) (ANOXIA exper) (REFLEX CONDITIONED)

JILEK, L.; KRULICH, L.; TROJAN, S.

On the problem of metabolic adaptation of nervous tissue to hypoxia during the course of ontogenesis. Sborn. lek. 64 no.5:129-135 My '62.

1.Fyziologicky ustav fakulty vseobecneho lekarstvi University Karlovy v Praze, prednosta prof. dr. Fr. Karasek, DrSc.

|                       |                       |
|-----------------------|-----------------------|
| (ANOXIA experimental) | (BRAIN metabolism)    |
| (GLYCOGEN metabolism) | (LACTATES metabolism) |
| (GLUCOSE metabolism)  |                       |

TROJAN, S.

Current status of the study on cerebral circulation. Cesk.fysiol.  
10 no.1:1-12 Ja '61.

1. Fysiologicky ustav fak. vseob. lek. KU, Praha.  
(BRAIN blood supply)



JILEK, L.;TROJAN, S.

Changes of the temperature and  $pO_2$  in the cerebral cortex during nitrogen, oxygen and carbon dioxide respiration during the course of ontogenesis. Cesk. fysiол. 8 no.3:412-413 S '59

1. Fysiologicky ustav Fak. vseob. lek. KU, Praha.

(CEREBRAL CORTEX physiol.)

(RESPIRATION physiol.)

(NITROGEN eff.)

(OXYGEN eff.)

(CARBON DIOXIDE eff.)

TROJAN, S.; JILEK, L.

Changes in the resistance of rats to stagnation anoxia after ligation of the carotid artery in the course of ontogenesis. Sborn. lek. 64 no.6:188-192 Je '62.

1. Fyziologický ústav fakulty všeobecného lékařství Karlovy university v Praze, přednosta prof. dr F. Karasek.  
(CAROTID ARTERIES physiol) (CEREBRAL ANOXIA exper)

CZECHOSLOVAKIA

S. TROJAN [Affiliation not given.]

"Symposium on How to Decrease Perinatal Mortality."

Prague, Ceskoslovenska Fysiologie, Vol 12, No 3, May 63; pp 219-220.

Abstract : Very brief report about this 5-day meeting in Moscow November 1962 with participation of Bulgarian, Czech (3), Hungarian, East German, Polish, Rumanian and Soviet scientists; over 50 papers, mostly clinical, were presented.

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L 12972-66 EWT(1)/FS(v)-3 SCTB DD

ACC NR: AP6005631

SOURCE CODE: CZ/0079/65/007/002/0132/0134

27 B

AUTHOR: Jilek, L.; Trojan, S.; Travnickova, E.

ORG: Physiological Institute, Faculty of General Medicine, Charles University, Prague

TITLE: Reaction and adaptation of the organism to anoxia<sup>2</sup> [This paper was presented at the Third Interdisciplinary Conference on Experimental and Clinical Study of Higher Nervous Functions held in Marianske Lazne from 19 to 23 October 1964.]

SOURCE: Activitas nervosa superior, v. 7, no. 2, 1965, 132-134

TOPIC TAGS: anoxia, rat, central nervous system, biologic metabolism

ABSTRACT: Newborn animals show a great resistance to anoxia. Experiments — were conducted on rats, with anoxia caused by radial acceleration of 10G in a centrifuge. The resulting stagnant anoxia stops the supply of oxygen, nutrients, electrolytes, water, etc. The reaction to this depends on the extent of energy stored in the CNS, specifically tissue glycogen, free glucose, and P, the intensity and quality of metabolism in the CNS, and the accumulation of catabolites, and pH changes. The brain tissue of the youngest rats is more resistant to pH changes, has a low intensity of metabolism, ability to use anaerobic glycolysis for energy source, and is subject to different effects of catabolites. Repeated exposure to stagnant anoxia can result in adaptation. In adapted animals hypoxic changes of the EEG are shorter than in controls. Orig. art. has: 2 figures. [JPRS]

SUB CODE: 06 SUBM DATE: none / ORIG REF: 004 / OTH REF: 002  
Card 1/1

CZECHOSLOVAKIA

JILEK, L.; TROJAN, S.; Department of Physiology, Faculty of General Medicine of Charles University (Fysiologicky ustav FVL UK), Prague.

"Development of Resiliency in Puppies to Positive Radial Acceleration."

Prague, Ceskoslovenska Fysiologie, Vol 14, No 5, Oct 1965; p 351.

Abstract: Study in 86 puppies aged 1 to 86 days at 22° C, with stagnation anoxemia under 10 g on special centrifuge. The resistance correlated with phylogenesis; the central nervous system of Rana esculenta was 30 times more resistant to ischemia than that of mammals; CNS of dogs was 64% less resistant than that of rats, the difference being greatest at birth and disappearing after the 22nd day of age. 2 Western, 1 Czech reference, graph. Paper presented at the 15th Physiology Days, Olomouc, 28 May 65.

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S/057/60/030/05/08/014  
B012/B056

9.3/30

AUTHOR:

Troitskiy, Yu. V.

TITLE:

Checking the Possibility of Being Able to Use a Non-homo-  
geneous Magnetic Field for the Purpose of Forming Electron  
Beams of High Density

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 5,  
pp. 512 - 521

TEXT: In the author's previous paper (Ref. 1) a system of forming electron fluxes of high density consisting of an electron gun was investigated. The gun was located in a magnetic field whose lines of force were aligned along the trajectories of the electrons emerging from the cathode with an initial velocity of zero. As numerous assumptions of grave importance had been made in the paper (Ref. 1), experimental checking of the formulas obtained was necessary. In the present paper the method and the results obtained by investigating an axially symmetric gun by Pirs (Pearce ?) (Ref. 5) with an incoming flow with the gun being located in a magnetic field, are described. First, the production of the

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Checking the Possibility of Being Able to Use a Non-homogeneous Magnetic Field for the Purpose of Forming Electron Beams of High Density

S/057/60/030/05/08/014  
B012/B056

non-homogeneous magnetic field, the lines of force of which develop along the electron trajectories, is described. Fig. 1 shows the shape of the magnetic screen used for the production of the magnetic field in Pirs' gun. The gun was enclosed in screens of such a shape that the magnetic lines of force had to develop along the calculated trajectories of the electrons. As, with certain values of the magnetic field, the influence exerted by the thermal velocities of the electrons on the cathode is eliminated, sharply outlined electron beams of high density may be formed in such a system. Next, the experimental checking of the influence exerted by the magnetic field upon the operation of Pirs' gun is described, and in Fig. 3 the basic scheme of one of the devices produced for this purpose is shown. The quantitative checking of the focusing condition (3) is given, and in Fig. 7 the characteristics of the magnetic screens used in the described device are shown. The oscillograms shown in Fig. 8 clearly illustrate the influence exerted by the magnetic fields upon the quality of the beam formed. The characteristic features occurring (in these curves) are pointed out. On the basis of the oscillograms obtained the experimental results are compared with the results obtained by the

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Checking the Possibility of Being Able to Use a Non-homogeneous Magnetic Field for the Purpose of Forming Electron Beams of High Density S/057/60/030/05/08/014 B012/B056

previously suggested theory, and agreement was found. Finally, it is pointed out that, on the basis of the data obtained, it may be said that the characteristics of the electrostatic forming system may be considerably improved by placing it within a magnetic field with lines of force developing along the electron trajectories. In this case, the current density in the beam may be considerably increased, and the beam may obtain sharp outlines, which is usually desirable in the case of superhigh frequency devices. There are 9 figures and 8 references: 4 Soviet, 3 English, and 1 German.

ASSOCIATION: Institut radiofiziki i elektroniki Sibirskogo otdeleniya AN SSSR Novosibirsk (Institute of Radiophysics and Electronics of the Siberian Department of the AS USSR, Novosibirsk)

SUBMITTED: July 14, 1959

Card 3/3



PANIC, B.; TROJ, M.; HRISTIC, V.

Methods of studying the biosynthesis of vitamin B<sub>12</sub> with the aid of radioactive cobalt <sup>60</sup>Co; abstract. Glas Hem dr 27 no. 9/10:533-534 '64

1. Institute for Applying Nuclear Energy in Agricultural, Veterinary, and Forestry Sciences, Belgrade-Zemun.

TROJANEK, J.; POSPISEK, J.

"1,3,4-trimethylpyrrolidine." In German. p. 307.

COLLECTION OF CZECHOSLOVAK CHEMICAL COMMUNICATIONS, Praha, Czech.,  
Vol. 24, No. 1, Jan. 1959

Monthly List of East European Accessions (EEAJ), LC, Vol. 8, No. 6, Sept. 59

Unclassified

TROJAN, A., MUDr; STRAUSS, J., MUDr

Incidence of ornithosis in workers of poultry plants and attempt for virological proof. Cas.lek.cesk.94 no.16:423-430 15 Apr '55.

1. I Interní oddelení Thomayerovy nemocnice Praha-Krc. Přednosta: MUDr J.A.Trojan. Ústav epidemiologie a mikrobiologie, Praha. Reditel: doc.MUDr K. Baska. Technická spolupráce: M. Fric, V. Svestkova.

(ORNITHOSIS,  
in poultry plant workers, virus isolation)  
(OCCUPATIONAL DISEASES,  
ornithosis in poultry plant workers, virus isolation)  
(MIYAGAWANELLA,  
isol)

*Trojan, Jiri*  
TROJAN, Jiri (Praha-Krc, Budejovicka 800)

New conception of gerontology, Cas. lek. cesk. 97 no.3:65-67 Jan 58.

1. I. interni oddeleni Thomayerovy n nemocnice Praha-Krc, prednosta  
MUDr Jiri Trojan.

(AGING

current concepts in gerontology (Cz))

TROJAN, J.A.

Clinical experiences with thiospasmin. Gas. lek. cesk. 99 no.23:  
704-711 3 Je '60.

1. I. int. oddeleni Thomayerovy nemocnice u Krči, prednosta MUDr.  
J.A. Trojan.  
(MUSCLES RELAXANTS ther.)

TROJAN, J.A., Primar MUDr

Experiences with sleep therapy. Cas.lek.cesk. 91 no.36:1037-1042  
5 Sept 52.

1. Prednosta Interniho geriatrickeho odd. SOLOU v Praze-Krci.  
(SLEEP, therapeutic use)

COUNTRY : CZECHOSLOVAKIA  
Category= : Human and Animal Physiology. T  
The Physiology of Age.  
Abs. Jour. : Ref Zhur-Biol., No 23, 1958, 106112  
Author : Trojan, Jir  
Institut. : -  
Title : New Concepts in Gerontology.  
  
Orig. Pub. : Cesop. lekaru ceskych, 1958, 97, No 3, 65-67  
  
Abstract : No abstract.

Card: 1/1

EXCERPTA MEDICA Sec 16 Vol 7/2 Cancer Feb 59

528. *Sarcoma 2056 - a new transplantable ascites tumour in rats* Trojan K. and Hradec J. Dept. of Biochem., Oncol. Inst., Prague *Neoplasma* 1958, 5:2 (106-110) Tables 1 Illus. 4

Description of a new type of ascites tumour, resulting from inoculation of organs of leukaemic mice into the peritoneal cavity of splenectomized rats; its microscopic picture and passages so far performed are discussed.

Stasney - Philadelphia, Pa.



EXCERPTA MEDICA Sec 5 Vol 12/8 General Path. Aug 59

2176. SARCOMA 2056 - A NEW TRANSPLANTABLE ASCITES TUMOUR IN  
RATS - Trojan K. and Hradec J. Dept. of Biochem., Oncol. Inst.,  
Prague - NEOPLASMA 1958, 5/2 (106-110) Tables 1 illus. 4

Description of a new type of ascites tumour, resulting from inoculation of organs  
of leukaemic mice into the peritoneal cavity of splenectomized rats; its micro-  
scopic picture and passages so far performed are discussed.

Stasney - Philadelphia, Pa. (V, 16)

TROJAN, K.

Biological effects of endogenous carcinogens. *Cesk. fysiол.* 8 no.4:  
336-337 July 59.

1. Onkologicky ustav, biochemicke oddeleni, Praha.  
(CARCINOGENS)

HRADEC, J.; DUSEK, Z.; TROJAN, K.; PTACEK, M.

Tissue factors influencing growth of experimental tumors. Cesk. fysiол.  
7 no.4:351-352 July 58.

1. Onkologicky ustav biochemicke oddeleni, Praha.  
(NEOPLASMS, experimental,  
eff. of various tissue factors on growth (Cz))

TROJAN, Karel; HRADEC, Jan

Sarcoma 2056; a new transplantable ascites tumor in rats. Neoplasma,  
Bratisl. 5 no.2:106-110 1958.

1. Department of Biochemistry, Oncological Institute, Praha. Authors'  
address: K. Trojan, Dr. J. Hradec, Na Tryhlarce 100, Praha 8, Liben.  
(SARCOMA, experimental,  
2056, transplantable ascites tumor in rats)

TROJAN, M.

New methods of production in bakeries. p. 254. Vol. 6, no. 5, 1955.  
PRUMYSL POTRAVIN. Praha.

Source: East European Accessions List (EEAL), LC, Vol. 5, no. 3. March 1956.

TROJAN, M.

Around haymaking. p. 343.  
(KRIDLA VLASTI, vol. 15, July 1955, Praha)

50: Monthly List of East European Accession, (EEAL), LC, Vol. 4, No. 11,  
Nov. 1955, Uncl.

TROJAN, M.

"Parachutists at Pardubice and Their Preparations for the 1st National Spartakiad." p. 4,  
(KRIDLA VLASTI, No. 1, Jan. 1955, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4  
No. 5, May 1955, Uncl.

TROJAN, O.

Long-range planning of the mechanization of road constructions for the years 1956-1960.

F. 40, (Silnice) Vol. 6, no. 7/8, July/Aug. 1957, Praha, Czechoslovakia

SO: Monthly Index of East European Acessions (EEAI) Vol. 6, No. 11 November 1957



TROJAN, O.

"Development of the highway network in Moravia."

p. 15 (Silnice) Vol. 6, no. 10, Oct. 1957.  
Prague, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4,  
April 1958

TROJAN, P.

Problem of environment of the species as a problem of methodology. p. 323.

SO: Monthly List of East European Accessions (FEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

TROJAN, P.

Oncodes reginae sp. n. and notes on the European species of the family  
Cyrtidae (Diptera).

p. 1  
Vol. 16, no. 8, Jan. 1956  
ANNALES ZOOLOGICI  
Warszawa.

SO: Monthly List of East European Accessions (EEAL), LC, Vol. 5, no. 12  
December 1956

TROJAN, P.

Notes on the taxonomy of some European species of the genus Omphrale  
Meig. (Diptera, Omphralidae).

p. 1  
Vol. 16, no. 11, Mar. 1956  
ANNALES ZOOLOGICI  
Warszawa

SO: MONTHLY LIST OF EAST EUROPEAN ACCESSIONS (EEAL), LC, VOL. 5, NO. 12  
December 1956

TROJAN, P.

"Automatized railroad car loader." (p.124). VEDA A TECHNIKA MLADEZI. (Ceskoslovensky svaz mladeze) Praha. No. 4, 1954.

SO: East European Accessions List, Vol. 3, No. 8, Aug 1954.

TROJAN, PRZEMYSŁAW.

Muchy i człowiek.

Warszawa, Poland

Panstwowe Wydawn. Naukowe, 1958. 123 p.

Monthly List of East European Accessions, (EEAI) LC, Vol. 9, No 1, Jan. 1960  
Uncl.

PETRUSEWICZ, Kazimierz; TRÓJAN, Przemysław

Sources of the contemporary concept of species. Kosmos biol  
13 no. 4:283-295 '64.

TROJAN, J.

"Labor Discipline in the Building Industry." p. 339 (Stavebni Prumysl, Vol. 3, no. 15/16, Aug. 1953, Praha)

SO: Monthly List of East European Accessions, Vol. 3, no. 2, Library of Congress, Feb. 1954, Uncl.



TROJAN, S.

Some features of reaction and adaption to hypoxia in young  
infants. Cesk. fysiол. 13 no.1:51-61 Ja'64.

1. Fysiologicky ustav Fak. vseob.lek.KU, Praha.

\*

JILEK, L.; TROJAN, S.

Survival of certain spinal reflexes in decapitated rats during the course of ontogenesis. Cesk.fysiol. 9 no.3:239-240 My '60.

1. Fysiologicky ustav fak. vseob. lek. KU, Praha.  
(REFLEX)  
(CENTRAL NERVOUS SYSTEM physiol)

TROJAN, S.; JILEK, L.

Procedures affecting the resistance of rats to positive acceleration during ontogeny. *Physiol Bohemoslov* 10 no.5:467-473 '61.

1. Institute of Physiology, Faculty of General Medicine, Charles University, Prague.

(ACCELERATION) (AGING)

JILEK, Lubor; TRAVNICKOVA, Eliana; TROJAN, Stanislav

Changes in higher nervous activity after hypoxic injury to the brain in an early postnatal period. Cas. lek. česk. 101 no.21: 656-659 My '62.

1. Fyziologicky ustav fakulty vseobecneho lekarstvi KU v Praze,  
prednosta prof. dr. Fr. Karasek, DrSc.  
(CENTRAL NERVOUS SYSTEM pathol)  
(CEREBRAL ANOXIA experimental)

FISCHER, Jindrich; JILEK, Lubor; TROJAN, Stanislav

Reversibility of histopathological changes in the CNS caused by  
stagnation anoxia in ontogenesis in rats. Cas. lek. cesk. 101  
no.21:650-654 My '62.

1. Neurohistologicka laborator II. patologickoanatomickeho ustavu  
fakulty vseobecneho lekarstvi KU v Praze, prednosta prof. dr.  
V. Jedlicka, DrSc. — Fyziologicky ustav fakulty vseobecneho lekarstvi  
KU v Praze, prednosta prof. dr. Fr. Karasek, DrSc.  
(CENTRAL NERVOUS SYSTEM pathol) (ISCHEMIA exper)  
(CEREBRAL ANOXIA exper)

JILEK, L.; KRULICH, L.; TROJAN, S.

The effect of sodium arsenate on the survival of spinal reflexes and the activity of the respiratory centre after decapitation in rats during their postnatal development. Physiol. bohemoslov. 12 no.3:242-247 '63.

1. Institute of Physiology, Faculty of General Medicine, Charles University, Prague.

(ARSENIC) (BODY TEMPERATURE) (REFLEXES)  
(NERVE TISSUE) (SPINAL NERVES) (KREBS CYCLE)  
(CARBOHYDRATE METABOLISM) (ANOXIA)

TROJAN, St.; JILEK, L.

Survival of spinal reflexes and of activities of the spinal center  
after the decapitation of rats during the course of ontogenesis.  
Sborn.lek. 62 no.9:263-271 S '60.

1. Fyziologicky ustav fakulty vseobecneho lekarstvi University  
Karlovy v Praze, prednosta prof. dr. F.Karasek.

(SPINAL CORD physiol)

(RESPIRATION physiol)

(BRAIN physiol)

TRCJAN, S.; JILIK, L.

The consequences of repeated exposure to stagnation asoxia during early postnatal development of the rat. Physiol. Bohemosl. 13 no.5:473-477 '64.

1. Institute of Physiology, Faculty of General Medicine, Charles University, Prague.



JILEK, L.; TROJAN, S.

The effect of repeated intraperitoneal glucose administration during early postnatal development on resistance of the central nervous system to anoxia. *Physiol. Bohemosl.* 13 no.5:504-509 '64.

1. Institute of Physiology, Faculty of General Medicine,  
Charles University, Prague.

JILEK, L.; TROJAN, S.; TRAVNICKOVA, E.

The reaction and adaptation of the organism to anoxia. Aktiv.  
nerv. sup. (Praha) 7 no.2:132-134 '65

1. Physiological Institute, Faculty of General Medicine, Charles  
University, Prague. 2. Jilek's address: Praha 2, Albertov 5.

TROJAN, S.; JILEK, L.

The effect of hypothermia on the CNS resistance against ischemia during ontogenesis in the rat. Sborn. lek. 67 no.4:127-132 Ap'65.

1. Fyziologicky ustav fakulty vseobecneho lekarstvi University Karlovy v Praze (prednosta: prof. dr. F. Karasek, DrSc.).

JILEK, L.; TROJAN, St.

Effect of cooling and of hyperglycemia on the survival of spinal reflexes and activities of the respiratory center after the decapitation of rats during the course of ontogenesis. Sborn.lek. 62 no.9:272-279 S '60.

1. Fysiologický ústav fakulty všeobecného lékařství Univerzity Karlovy v Praze, přednosta prof. dr. F.Karasek.

(BRAIN physiol)

(SPINAL CORD physiol)

(HYPOTHERMIA induced exper)

(RESPIRATION physiol)

(BLOOD SUGAR)